

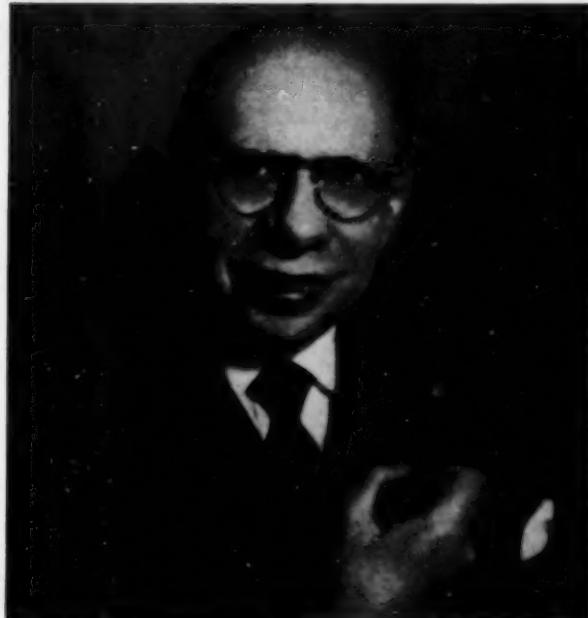
THE

January, 1959

CHEMIST

VOLUME XXXVI

NUMBER 1



Karl M. Herstein, F.A.I.C.

Received New York Chapter Honor Scroll.

(See page 11)



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Vol. XXXVI

January, 1959

Number 1

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Deadlines for THE CHEMIST: For the March issue the deadline is February 15.

* * *

THE AMERICAN INSTITUTE OF CHEMISTS does not necessarily endorse any of the facts or opinions advanced in articles which appear in THE CHEMIST.

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TO COME IN FEBRUARY

"Time and Talents Wisely Used" contains the key to the greater efficiency of research chemists. Dr. Bernard S. Friedman, F.A.I.C., accepted the Honor Scroll of the Chicago AIC Chapter with this fine paper. • Dr. William S. Wilson, F.A.I.C., of the University of Alaska, in "the golden heart" of the North, promises an account of the present and future of chemists and chemical engineers in this, our newest State.

Recommended Suppliers and Services

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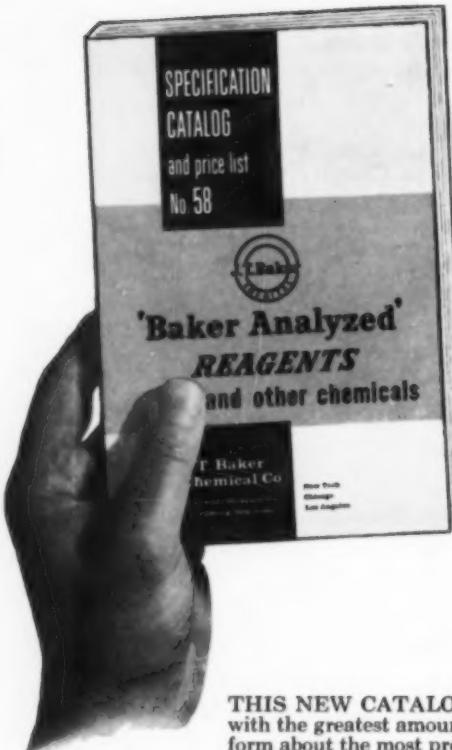
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EDITORIAL

Inspiration for A New Year of Progress

WITH this New Year, the 35th Anniversary year of the AIC is blending into the 36th. At the memorable 35th Annual Meeting in Los Angeles, AIC President Emil Ott was asked to write to our Charter members in appreciation of their work in establishing the AIC.

The replies which he received are most gratifying and attest to the devotion and keen interest of our founding members. A few excerpts from these letters are quoted here for their inspiration and thought toward continued professional advancement:

"Though 1923 seems a long time ago, the thirty-five years have slipped by amazingly quickly. What eventful years they have been and how conditions have changed, not only in our own country, but all over the world! Changed, on the whole for the better, I think, though there are some things (and some people) whom we all feel could still be improved. I send my best wishes to you, and all your colleagues, in your efforts to maintain and to raise the standards of the profession."

—Leonard Wickenden
Weston, Conn.

"Your review of the aims and aspirations of the organization served to renew my hope that chemists might some day attain . . . real professional standing alongside of doctors, lawyers and engineers . . .

"The greatest problem (of local Chapters) seems to be in injecting more life and interest into meetings so that they will attract a larger percentage of the membership, as well as professional men who are non-members. As I recall the early days, there

were few members who did not attend two or three meetings each year, and the majority seldom missed a meeting . . . I believe that a frank discussion of controversial subjects involving the problems of chemists would do more to stimulate interest in the meetings of the local chapters than anything else which could be done . . . I am still heartily in accord with the objectives of the INSTITUTE, and I am still anxious to do all that I can to further these objectives."

—Charles F. Smith, Jr.
Buffalo, N. Y.

"I was associated with Dr. Horace G. Byers during World War I and I can well remember his enthusiastic approach to an organization that would supplement the American Chemical Society in professional matters . . . Many have given freely of their time and money and today the INSTITUTE serves a useful purpose for all chemists."

—R. C. Charron
Metuchen, N. J.

"I recall quite vividly the organization of the INSTITUTE, as well as some of the members, particularly Lloyd Van Doren . . . I have given it my support and have approved the fundamental purposes and functions of the INSTITUTE. With all good wishes for the continued success of the AIC, I am,"

—Dr. Louis Freedman
New York, N. Y.

"It is truly a deep satisfaction to have seen how the INSTITUTE has grown throughout the years . . . The chemist still does not get the recognition the profession deserves. There are so many reasons for this, it is hard to pick out the circumstances that cause the most trouble . . . The chemist must make it a point to become personally known to the executive family of the corporation or company by which he is employed. If he stays to

himself in the laboratory, he will find his position is just that of some minor employee, and he will be receiving his instructions from office clerks . . . There are cases where the head chemist for the plant laboratory, to keep expenses low, does not try to obtain deserved compensation and standing for assistant chemists . . . I find that the public chemists in many cases do not charge a fee in proportion to the value of the services."

—Edward G. Williams
New Orleans, La.

As this New Year begins, we again express our appreciation to our Charter members for their inspiration and interest. To every member of the AIC we wish a happier and more successful New Year, with progress in professional status.

About AIC Members

Dr. Max Bender, F.A.I.C., of American Cyanamid Co., Bound Brook, N. J., addressed the research and development staff of S. C. Johnson & Son, Inc., November 17, at Racine, Wis., on the stability of suspensions in organic medium. Recently he was chosen chairman-elect of the Physical Chemistry Group of the North Jersey Section of the American Chemical Society. On September 11th, he presented the introductory paper and presided over the Symposium on "The Stability of Dispersions of Solids in Organic Liquids," held by the Colloid Division and the Division of Paint, Plastics and Printing Ink Chemistry of the ACS, in Chicago.

Dr. Albert L. Elder, F.A.I.C., director of research, Corn Products Co., Argo, Ill., has been chosen president-elect of the American Chemical Society for 1959. **Dr. William J. Sparks**, Hon. AIC, scientific advisor, Esso Research & Engineering, Linden, N. J., has been elected director-at-large. **Dr. Louis P. Hammett**, F.A.I.C., professor of chemistry, Columbia University, New York, was re-elected regional director for the second district.

Edward F. Kenney, F.A.I.C., chief chemist, U. S. Customs Laboratory, New York 14, N. Y., recently presented service pins to long time employees of the laboratory. He, as well as **Isidore Schnopper**, F.A.I.C., assistant chief chemist, received pins representing more than thirty years of service. **Cosmo LaForgia**, F.A.I.C., and **Daniel J. Ricci**, F.A.I.C., chemists, received pins representing more than fifteen years of service.

Lawrence Flett, Hon. AIC, consultant, National Aniline Division, Allied Chemical Corp., New York, spoke before the Western New York Section of the American Chemical Society recently on "Success in the Retrieval of Technical Information."

Dr. Sol Skolnik, F.A.I.C., is now with the Chemical Division of Aerojet-General Corp., P.O. Box 296, Azusa, California.

(Also see page 10)

SPECIAL AIC ANNOUNCEMENTS

Welcome, Southwest Chapter!

At the meeting of the National Council in December, the petition of AIC members in Texas for the formation of a Southwest Chapter of the AIC was approved. The organization of this new Chapter was initiated by Phil T. Pafford of Continental Oil Company, Houston, Texas.

New Advisory Board Members for 'The Chemist'

Three new members have been appointed to the Advisory Board of THE CHEMIST: Dr. Joseph F. Abere, of Minnesota Mining and Manufacturing Co., St. Paul, Minn.; Bernard E. Schaar, retired chairman of the board of Schaar & Co., Chicago, Ill., and P. J. Wood, technical director, Royce Chemical Co., Carlton Hill, N. J. They replace retired Advisory Board members: Dr. Bernard S. Friedman, Richard L. Moore, and Dr. Malcolm M. Renfrew.

New Chairman-elect for Chicago Chapter

Dr. W. S. Guthmann, president, Ringwood Chemical Corp., Ringwood, Ill., has been elected chairman-elect of the Chicago Chapter to replace Clark E. Thorp, who left the area to accept a position in Beaver Falls, N. Y.

Code of Ethics Revised Slightly

The Committee on Ethics recommended, and the Council approved, a minor revision to Point 11 of the Code of Ethics, to eliminate some of the misunderstanding that has occurred in the interpretation of this section. Point 11 now reads: "He shall not use any unfair, improper, or questionable methods of securing professional work or advancement."

To All Chapter Chairmen

The chairman of each Chapter is a member of the Committee on Nominations. It is the function of each member of this committee to nominate a president-elect and three councilors for this year's nomination ballot, which will be mailed to the membership. The membership will then choose the names which will appear on the election ballot. The members of the Committee on Nominations will shortly receive a letter from the AIC Secretary requesting these nominations. Please reply promptly, and bear in mind that only Fellows may be nominated for these offices.

The 62nd Annual Meeting of the American Society for Testing Materials, Philadelphia 3, Pa., will be held at Chalfonte-Haddon Hall, Atlantic City, N. J., June 21-26, 1959.

Professional Appointments

- Jan. 6, 1959. Philadelphia, Pa.**, Penn Sherwood Hotel. Pennsylvania Chapter. Honor or Scroll Award Dinner. 6:30 p.m. Program 8:00 p.m. Presentation of the Honor Scroll of the Chapter by AIC President Ott to Dr. J. W. E. Harrisson of LaWall & Harrisson, Philadelphia, Pa. Acceptance Address: "The Consultant—His Contribution to the Community." For reservations: Dr. W. E. Langeland, Wyeth Institute, Radnor, Pa. (MUrray 8-4400).
- Jan. 8, 1959. New York, N. Y.** Hotel Shelburne, 37th St. & Lexington Ave. New York Chapter meeting. Social Hour 5:30 p.m. Dinner 6:30 p.m. Program 7:30 p.m. Honorary Membership will be presented to Dr. Foster D. Snell, president, Foster D. Snell, Inc., New York, N. Y. Speaking for Dr. Snell as a person: Dr. Donald B. Keyes. Speaking for Dr. Snell as a chemist: Cyril S. Kimball, executive vice president, Foster D. Snell, Inc. Presentation of Honorary Membership by Dr. Emil Ott, AIC president, to Dr. Snell. Acceptance Address: "The Independent Consultant and Independent Laboratory as a Professional Activity." Réservations (Dinner \$6.25 in advance; \$7.00 at the door). Robert R. Dean, Westvaco Chlor-Alkali Div., 161 E. 42nd St., New York 17, N. Y. (MU 7-7400).
- Jan. 13, 1959. Washington, D. C.** O'Donnell's Sea Grill, 1223 E. St., N.W. Washington Chapter. Luncheon meeting 12:15 p.m. Speaker, John C. Green, Director, Office of Technical Services, Department of Commerce. "The Program of the Office of Technical Services."
- Jan. 14, 1959. Chicago, Ill.**, Furniture Club of America, 667 McClurg Court. Chicago Chapter meeting. Reception 6:00 p.m., sponsored by The Griffith Labs., Inc. Dinner 7:00 p.m. Presentation of Honorary AIC Membership to Dr. Lloyd A. Hall, technical director, The Griffith Labs., Inc. Speaking for Dr. Hall as "The Citizen," the Hon. Richard J. Daley, Mayor of Chicago. Speaking for Dr. Hall as "The Chemist," F. Willard Griffith, executive vice president, The Griffith Labs., Inc. Presentation of Honorary Membership: Dr. Emil Ott, AIC president. Acceptance Address: "Catalyst for Better Living." Reservations: Send check (\$5.00) to Harry J. Pappas, 525 So. Madison Ave., La Grange, Ill. or telephone Miss Virginia Cronin, Universal Oil Products, ROdney 3-6000, Ext. 516.
- Jan. 15, 1959. Van Nuys, California**, Schlitz Brewery. Western Chapter. Social meeting, dinner, and plant tour. For information, Stuart R. Garnett, 506 W. Almond St., Compton 4, Calif.
- Jan. 19, 1959. Wilmington, Delaware**. Lord De La Warr Hotel, du Pont Parkway (1 mile south of Wilmington), Gold Room. Delaware Chapter Meeting. Cocktails, 6:30 p.m. Dinner 7:00 p.m. Speaker, Dr. Emil Ott, AIC president, "Professional Obligations of Chemists." Presentation of Charter to the Delaware Chapter. Election of permanent officers. For information: Dr. Stephen D. Bruck, Carothers Research Lab., du Pont Experimental Station, Wilmington, Del. (OLympia 6-3361, Ext. 3216).
- Jan. 23, 1959. Minneapolis, Minn.** Twin City Chapter. Meeting. Speaker, AIC President Emil Ott, "Professional Obligations of Chemists." For information: J. F. Ahere, Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
- Feb. 1959. Niagara Falls, N. Y.**, Niagara Chapter meeting. Details to be announced.
- Feb. 5, 1959. Philadelphia, Pa.** Engineers' Club. Pennsylvania Chapter Luncheon 12:15 p.m. Speaker: Charles P. Neidig, F.A.I.C., of White, Weld & Co. "The Chemist and the Investor." Reservations: Dr. William A. Langeland, Wyeth Labs., Radnor, Pa. (MUrray 8-4400).
- Feb. 6, 1959. New York, N. Y.** New York Chapter meeting jointly with New York Section of the American Chemical Society. Place and time to be announced. Speaker, Dr. Wallace R. Brode, scientific advisor to the Department of State. Subject: "Government Policy. Why the Chemist Should Contribute." (To be discussed: Professional responsibility of the chemist. Need for the scientific approach. How he can contribute to local, state, and federal policy. Benefits to the chemist . . . to commerce . . . to society.)

PROFESSIONAL APPOINTMENTS

- Feb. 10, 1959. Newark, N. J.** Military Park Hotel. New Jersey Chapter meeting. Dinner 6:30 p.m. preceded by New Jersey Chapter Council meeting at 5:00 p.m., with chairman, Dr. L. T. Eby presiding. Program 8:00 p.m. Speaker, Dr. Thomas Q. Gilson, Dept. of Management, Rutgers University. Subject: "Resources for Self Development—Unusual Avenues." For reservations, Dr. John F. Mahoney, Merck & Co., Inc., Rahway, N. J. (Fulton 1-5000, Ext. 3254).
- Feb. 10, 1959. New York, N. Y.** The Chemists' Club, 52 E. 41st St., AIC National Council and Board of Directors' meeting and dinner. The Board meets at 5:30 p.m., the Council at 6:00 p.m.
- Feb. 26, 1959. Chicago, Illinois.** Prudential Bldg., Beaubien Room. Chicago Chapter meeting. Cocktails 6 p.m. Dinner 6:30. Speaker, Harrison C. Blankmeyer, Manager, Reinforced Plastics Development Lab., Owens-Corning Fiberglass Corp. Subject: "When Should I Change Jobs."
- Mar. 5, 1959. Philadelphia, Pa.** Engineers' Club. Pennsylvania Chapter meeting. Speaker to be announced. For information: Dr. W. E. Langeland, Wyeth Institute, Radnor, Pa. (MUrray 8-4400).
- Spring, 1959. Los Angeles, Calif.** Date and details to be announced. Western Chapter. Dinner-dance, "just to prove chemists are people and can have fun." For information, Stuart R. Garnett, 506 W. Almond St., Compton 4, Calif.
- Mar. 26, 1959. Chicago, Illinois.** Prudential Bldg., Beaubien Room. Chicago Chapter meeting. Cocktails 6:00 p.m. Dinner 6:30. Speaker: Dr. Edward L. Haenisch, F.A.I.C., Professor of chemistry, Wabash College, currently program director for Summer Institutes, the National Science Foundation. Subject: "Activities of the National Science Foundation."
- April, 1959. Niagara Falls, N. Y.** Niagara Chapter meeting. Day and details to be announced.
- Apr. 9, 1959. Pittsburgh, Pa.** Pennsylvania Chapter dinner meeting. Details to be announced. Speaker, Dr. Emil Ott, AIC President, "Professional Obligations of the Chemist."
- Apr. 16, 1959, New York, N. Y.** The Chemists' Club, 52 E. 41st St. New York Chapter meeting. Social Hour 5:30 p.m. Dinner 6:30 p.m. Address 7:30 p.m. Speaker: Earl Ubell, science editor, *New York Herald Tribune*. Subject: "Community Recognition—How the Chemist Can Achieve It." (To be discussed: Professional responsibility of the successful chemist. Public relations techniques for obtaining recognition. Working with editors . . . with others who contribute to the chemist's recognition. Benefits to the chemist . . . to the profession . . . to society.) Reservations: (Dinner \$4.90. No charge to those attending address only), Robert R. Dean, Westvaco Chlor-Alkali Div., 161 E. 42nd St., New York 17, N. Y. (MU 7-7400).
- Apr. 21, 1959. Newark, N. J.** Military Park Hotel. New Jersey Chapter. Annual Awards Meeting and Banquet. Honor scroll and student medals to be presented. Cocktails 6:00 p.m. Dinner 7:00 p.m. Program 8:00 p.m. Friends, members of AIC and wives cordially invited. For program details, Dr. H. R. McCleary, chairman, Honor Scroll Program and Arrangements, American Cyanamid Co., Bound Brook, N. J. (ELliott 6-2000). For reservations, Dr. John F. Mahoney, Merck & Co., Inc., Rahway, N. J. (Fulton 1-5000, Ext. 3254).
- May 6, 1959. Atlantic City, N. J.** Traymore Hotel. AIC National Council and Board of Directors meeting and dinner. 6:00 p.m.
- May 7, 1959. Philadelphia, Pa.** Engineers' Club. Pennsylvania Chapter. Student Award Night. Speaker and topic to be announced. For reservations, Dr. W. E. Langeland, Wyeth Institute, Radnor, Pa. (MUrray 8-4400).
- May 7-8, 1959. Atlantic City, N. J.** Traymore Hotel. Thirty-sixth Annual AIC Meeting. Theme: "The Chemist and Engineer in Our Economy." The New York and New Jersey Chapters will be hosts.

- May 19, 1959. Linden, N. J.** Esso Refinery, New Jersey Chapter Plant trip. Tour begins at 3:00 p.m. Advance reservations and registration required as number for tour is limited. Business meeting and dinner to follow tour. For details: Dr. Stephen E. Ulrich, Chairman, Program Committee, Rutgers University, New Brunswick, N. J. (CHarter 7-1666). For reservations: Dr. John F. Mahoney, Merck & Co., Inc., Rahway, N. J. (FULTON 1-5000, Ext. 3254).
- May 28, 1959. New York, N. Y.** Hotel Shelburne, 37th St. & Lexington Ave., New York Chapter. Honor Scroll Award Meeting. Social Hour 5:30 p.m. Award recipient and speakers to be announced.
- June, 1959. Niagara Falls, N. Y.** Niagara Chapter Meeting. Date and details to be announced.
- May 11-13, 1960. Minneapolis, Minn.** 37th Annual AIC Meeting. The Twin City Chapter will be our host.
- May 11-12, 1961. Washington, D. C.** Statler Hotel. 38th Annual AIC Meeting. The Washington Chapter will be our host.

Dr. Harvey A. Neville, F.A.I.C., director of the Institute of Research of Lehigh University, announces that three research grants totalling \$98,480. have been made to the Institute, for research in the departments of physics and chemical engineering.

Dr. Davis R. Dewey II, president of Baird-Atomic, Inc., Cambridge, Mass., has been elected a director of the Atomic Industrial Forum, Inc., New York 22, N. Y. to serve until 1961.



Cecil M. Shilstone, F.A.I.C., partner, Shilstone Testing Lab., New Orleans 16, La., recently presented a \$1000, annual scholarship for biology graduates, to Loyola University, New Orleans. The grant is a gift from him, James M. Shilstone, and Herbert M. Shilstone, Jr., in memory of their father, the late Dr. Herbert M. Shilstone.

Robert I. Wishnick, F.A.I.C., chairman of the board, Witco Chemical Co., Inc., New York, N.Y., announces the election of Ray Fish, of Houston, Texas, to the board of directors.

W. Alec Jordan, F.A.I.C., announces that W. Alec Jordan Associates, public relations and chemical marketing consultants, have moved to larger offices at 290 Park Ave., New York 17, N. Y.

*(Also see page 33
and following pages)*

Chemistry—A Profession and a Way of Life

Karl M. Herstein, F.A.I.C.

Herstein Laboratories, Inc., 44 New Street, New York 4, N. Y.

(Presented when the author received the 1958 Honor Scroll of the New York AIC Chapter, New York, N. Y.)

I HAVE chosen for my theme, "Chemistry—a Profession and a Way of Life." Let us go one step at a time. First; What are chemists and chemical engineers? It is evident that you cannot tell a chemist by what he does. Chemists are people and they come in all sizes, shapes, ages, and ranges of ability. Nowadays chemists and chemical engineers are to be found in almost every kind of activity; in the laboratory and the plant, in executive and sales forces, in libraries and teaching, in college and university presidencies. They form so many threads in our industrial and technological complex that it is impossible to unravel them all.

Let us try another approach. A very wise man, Arthur W. MacMahon, has recently fathered a report on the educational future of Columbia University. In it he says,

"Ideally, the liberally educated man is one whose mind and imagination have been so trained and stimulated that he can see beyond the narrow circle of his everyday routine and practice. He has been encouraged to think about and to evaluate the broader issues that figure in his experience, to judge things for himself and to possess vital interests he pursues simply for the intrinsic delight they give him. As a citizen, he should know something about the history and present circumstances of the society of which he is a part. As a human being, he should

be acquainted with attempts other men made to map the moral geography of the human science, and his emotions and sensibilities should be exercised by the study of enduring products of human art and intelligence. As a member of a larger natural order, he should know something about his home in nature."

This is a definition of a liberal education, but I believe, and most of you may agree, that a one-sided, technically educated man cannot be a true professional.

All the varieties of chemists listed and all those I have omitted to list have one thing in common. In their work they use their chemical training, or rather their minds run on the rails their chemical training has provided. They follow the experimental approach, close observation, the demand for facts. When these are provided, they will generalize, develop their theories, and from these deduce the conclusions which are required for their decisions.

Now where does the liberal education come in? Everywhere! No one of us lives in an ivory tower. We work with our colleagues and for our employers. We have families, a social circle. We are citizens of our municipality, of our state, our nation and of the world.

We want in all of these relations the status of professionals, not mere-

ly of white collar laborers. To receive it we must have the qualities to command it: the broad knowledge, the sound judgment and the ability to communicate that compel hearing and respect. Not chemistry alone, not science more generally, will furnish these. They require some knowledge of history, of government, of philosophy, of art, and especially enough reading of English and other literature to give a feeling for the use of language as an art. The men and women who have these qualities plus a good command of chemistry will neither meet with doubt about their professional status, nor feel such doubt themselves.

In fact, only with these varied and apparently extraneous abilities will they begin to understand what professional status really means. I am not going to attempt a definition of professional status even though our friend Jim Stack feels that it can be epitomized like public relations: "Doing the right thing and getting credit for it." Instead, I hope that what I have to say will illustrate my interpretation of the words. They do not mean primarily the kind of thing that has come to be called "fringe benefits." These are useful, sometimes pleasant, and desirable to the degree that they do not overshadow the inner qualities and their outward showing by which a professional man stands out from and above the less fortunate majority.

I shall talk a little now of chemistry as a way of life and at the end I shall try to tie together my two themes. Since the chemist's life with which I am best acquainted and the only one on which I can speak with complete authority is my own, I shall use it as an example, only in the interest of accuracy.

Last year our New York Chapter Honor Scroll was given to the son of a Methodist minister. A few years ago the recipient was the son of two Methodist ministers. Neither of my parents was in that calling, but in most important matters my early conditioning was very similar to that of these two predecessors. We learned by direct observation and experience that the good life was much more a matter of mind, or shall I say spirit, than of possessions. We learned also that public respect came from the same source. We learned an undying hunger for knowledge and the willingness to work to obtain it. We learned that an interest in, and active participation in public affairs was a part of living as essential as concern with private affairs.

The scale is unimportant. Whether it is membership in a garden or bridge club, or becoming president of a national scientific society, it is the concern about others not in our household that counts. Now as to schooling, from kindergarten on, my teachers knew so much more than I did that they could open the door to new

CHEMISTRY—A PROFESSION AND A WAY OF LIFE

and broader fields of knowledge than were in the daily stint and so there have always been in my life attraction to going forward to greater understanding.

Alexander Smith, whose text books are still alive after forty-five years, taught my first college course in chemistry. A distinguished scientist and head of the department, he did not consider it beneath him to teach the introductory course to college freshmen, and the inspiration which came from his lectures and beautifully prepared experiments heightened the flame of enthusiasm for chemistry in all who heard him. Incidentally, the experiments were prepared with the aid of his lecture assistant, Bob Moore, who was the father of our Richard Moore.

Many of the teachers under whom I studied were great men in their day and some are still active. Their quite proper pride in being chemists rubbed off onto their students, giving them an early start in professional consciousness. From my first job until my present one there has almost always been a challenge in my work to my knowledge, my skill, and my patience. The satisfaction of being able to meet with advancing challenges is one of the great rewards of a chemical career.

My participation in professional activities in THE AMERICAN INSTITUTE OF CHEMISTS and in the American Chemical Society has been purely

selfish. I know of no better way in which it would be possible to meet and work with so many fine people, and to gain the assurance that what I did was in its own small way something that would continue to be useful and advantageous to my professional brethren.

The late Raymond Kirk once told me of a conversation he had with Henry Eyring, in which Eyring said, "Kirk, weren't we lucky to discover chemistry?" On this same theme Kirk and I were talking another time, trying to explain to our satisfaction how it happened that our friends and contemporaries had generally risen to the top ranks in their fields. We decided that it was no snobbery on our part that made us select these people to be our friends but simply the fact that those who had the ability to rise in the profession, and the interest to work for the profession, were still around while the others who were lacking one way or another, had disappeared from our view.

I hope that I have made it clear that the concept of chemistry as a profession does imply a way of life which is a good way.

Now a few words about professional organizations. It is the tendency of many in our profession to consider the organizations in law and in medicine as models. Neither the bar nor the medical association should properly serve as models for professional organizations of chemists for the one

overwhelming reason that in law and in medicine the great majority of practitioners are self-employed.

In chemistry, as in journalism, or in the acting profession, most of the members are employees. We might therefore consider how journalists and actors have solved successfully the problem of professional organization. For one thing, as in chemistry, the range of ability from a by-line columnist who is syndicated all over the country, to a police reporter, is probably as wide as among chemists. In acting we have the range from actor managers and stars, to chorus boys and girls. Doctors and lawyers deal directly with the public in most instances. Journalists and actors do not. All require a professional education and training. The analogy to chemists is close and worth consideration.

I frankly do not know what conclusion is to be drawn from this line of thought. The science of organization has been developed in the past few decades to a point of independence. It forms the subject matter in professional management courses which are given on the graduate level in some of our best schools. As an amateur it would be presumptuous of me to venture an opinion. Nevertheless, the thought that I have given to this subject does represent a different approach and should not be discarded merely because there is a faint odor of unionization about it. One of the things I learned from my

parents was the habit of outspokenness, which I have just illustrated. Merely because one of my opinions is heterodox has never seemed to me a sufficient reason for refusing to air it.

By all means let us teach the newcomers to our profession the pride that we have in it; let us encourage them to work as we have for better status and recognition, and let us also hope that with fresh minds an increasingly rational approach to the problem will be taken.

Finally, it is very probable that devoting myself to so many things I have not concentrated enough on the common idea of success. This may be the reason that my fortune is some three orders of magnitude away from being in the millions. I am happy to count my wealth in my friends.

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Karl Herstein — Devoted to Professional Advancement

KARL M. HERSTEIN, president of Herstein Laboratories, Inc., New York 4, N. Y., received the Honor Scroll of the New York AIC Chapter, June 4, at a meeting held at Mitzi's Jager House, New York, N. Y. In accordance with his wishes, the entire program was carried out in an atmosphere of warm informality, so that even a past AIC president was seen singing to the accompaniment of the accordion!

Dr. Henry B. Hass, president, Sugar Research Foundation, New York, and immediate past president, AIC, whose hobbies include limerick writing, was toastmaster, and among the limericks was this one:

A warm-hearted chemist, named Curly,
Loves Gotham's mad, glad hurly-burly.
Its crowds and its traffic
And buildings giraffe
Appeal to him more than a girlie.

On the more serious side, Dr. Charles G. Overberger, head, Department of Chemistry, Polytechnic Institute of Brooklyn, N. Y., spoke of the encouragement Mr. Herstein has given to Polytechnic students and teachers, who value his advice and guidance.

Richard L. Moore of the Public Relations Dept. of W. R. Grace & Co., New York, told of an interview with Mr. Herstein, wherein he revealed how to succeed in the chemical profession: "Study hard, know

your subject thoroughly, and spend your evenings attending the meetings of the professional societies."

Samuel Schenberg, supervisor of science, High School Division, Board of Education of the City of New York, acknowledged indebtedness to Mr. Herstein for the program for summer employment of high school teachers in New York city.

Dr. Hiram R. Hanmer, director of research, the American Tobacco Company, Richmond, Virginia, presented a talk rich in wit, literary expression, and humor, which contributed to the character profile of the honor recipient.

Dr. Ernest I. Becker, then chairman of the New York Chapter, presented the Honor Scroll to Mr. Herstein, who responded with "Chemistry a Profession and a Way of Life." (See preceding pages.)

Karl Marx Herstein was born in Elizabeth, N. J., November 29, 1896, a son of Dr. Bernard Herstein, also a chemist, who filled a number of high offices in the Federal Government. Karl received the B.S. degree from Columbia University in 1917 in time to serve his country as a "powder monkey" in explosives plants in Wisconsin and the East. He was commissioned a second lieutenant in the Reserve, completing his service in January 1919. For two years

he worked for the Sackett and Wilhelms Lithographic Corporation. In 1922 he joined Hochstader Laboratories. By 1935, he was a partner in Kenney-Herstein, Inc. Since 1937, he has been proprietor of Herstein Laboratories, Inc.

He is a national councilor of the American Chemical Society; a life member of The Chemists' Club; a licensed professional engineer in New York State, and a member of the Society of Chemical Industry. He holds ten patents, and is the author of a score of publications, including monographs on wines and liquors.

He joined the AIC in 1925; was the secretary of the New York AIC Chapter in 1929-30; representative from the New York Chapter to the national AIC Council in 1930-32; has served on the AIC Qualifications Committee; has been chairman of the New York Chapter, and is at present a national councilor-at-large.

He has a host of friends, associates, and clients, whom he in turn amazes, amuses, and abuses. His hobbies are his pipe, useless mathematics, bridge, history, limericks and more formal poetry. He has many violent prejudices, which he expresses freely. These range from the use of the locution "familiar with" to mean "acquainted with," to slipshod craftsmanship and political venality; on the other hand he is equally enthusiastic about many things, among which stand very high efforts for the

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professional advancement of chemists.

The citation on the Honor Scroll to Mr. Herstein reads:

In recognition of unselfish and effective devotion to the profession of chemistry, of high personal standards and scientific integrity, of youthful curiosity and lifetime interest in mathematics, and particularly of genuine enthusiasm for and interest in people.

The Royal Australian Chemical Institute announces that Mr. L. W. Weickhardt, technical director of I.C.I.A.N.Z. Ltd., has been elected president of The Royal Australian Chemical Institute for 1958-59, in succession to Dr. I. W. Wark.

Turco Products, Inc., Los Angeles 1, Calif., announces that it is building in Wilmington, Calif., a million-dollar national headquarters, scheduled for completion next summer.

"Colleges Don't Teach — You Learn from Individuals"

Dr. D. B. Keyes, F.A.I.C.
Former AIC President

(Presented at the installation of the Eta Chapter of Omega Chi Epsilon—the honorary chemical engineering fraternity—at Newark College of Engineering, Newark, N. J.)

INDUSTRIAL leaders expect the college graduate in chemical engineering not only to be well informed in basic science and engineering, but also in the following arts: (1) How to think. (2) How to create. (3) How to communicate. (4) How to work with others.

Looking back over your college career, tell me, did you not acquire your knowledge of science and engineering from books and from doing problems? When the problem was too tough and the text inadequate, did you not go to someone, a professor, or perhaps a colleague, for help?

Again looking back over your college career, tell me, did you ever have a course in any one of the four arts—how to think, create, communicate, or work with others? Did you ever own a text book in any one of the four subjects? Your answer may be "no" to both questions, but in spite of this, you do feel you know something about these arts? From whom and how did you learn?

Is it not true that you have gone with your problems to your family, teachers, and friends? Why? Because when you practice one of these arts

you failed, or at least you were not completely satisfied with the results.

Tell me, did you not find more competent advisors among your professors and your classmates than anywhere else? Today, after forty years of practicing my profession, I still do not know many of the answers to my problems, but I do know the men who do, and they are willing to advise me.

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A Chemist Looks at Solar Energy

(A CHALLENGE TO THE CREATIVE CHEMIST)

Merritt L. Kastens, F.A.I.C.

Assistant Director, Stanford Research Institute, Menlo Park, California

SOLAR energy, which must inevitably assume an important role in our energy supply picture, presents its particular challenges to the chemical professions. Many technological hurdles yet stand in the way of widespread practical utilization of the energy from the sun. A significant number of these obstacles will require discoveries and developments in chemical technology for their solution.

Two basic characteristics of solar energy are at the root of the technological, and hence the economic, difficulties in its application. The first is its inherently low concentration. The sun shines on the just and the unjust, the rich and the poor, but at best it shines with an intensity of about one kilowatt per square yard. Calculated for a large area, the available energy might be impressive. However, it must be collected, concentrated, and for most purposes converted into another form before it is of practical use.

A tremendous asset of solar energy is the fact that it is available where you want it. There are no costly transmission costs or transmission losses. But there is a compensating difficulty—the sun's energy is often not available when you want it. This energy supply is intermittent on a daily cy-

cle and is often interrupted by adverse weather. This immutable characteristic is the second condition which must be overcome for practical application of this energy. Some way must be found to distribute this intermittent source uniformly throughout the year. The chemical engineer and chemist must contribute to the solution of these central problems.

The sun's energy is most easily collected in the form of heat. Whether the heat is later used for distilling water, driving an engine, or for heating and cooling a house is a secondary consideration. Considerable worldwide research has been devoted to the chemical design of solar collectors. In the U.S. this effort has been directed primarily toward flat-plate collectors involving no concentration or focusing of the sun's rays. However, the concentrating collectors which make available a more concentrated source of heat also have their partisans. Flat-plate collectors, and to a lesser extent concentrating collectors, are dependent upon a "hot-house" effect to prevent loss of the collected heat through re-radiation, and so are much dependent upon materials with special light transmission and absorption characteristics.

One of the most exciting developments in the field of solar technology

was the announcement by Dr. H. Tabor of the National Physical Laboratories of Israel that a material had been developed which has different absorption characteristics in different visible and thermal radiation wavelengths. This material, very absorbent to visible light, appears quite black to the eye. However, it is reflective to the longer wavelengths of infrared heat radiation. Therefore, when the radiant energy from the sun is absorbed in a body coated with this material, it is essentially trapped and will not re-radiate as heat radiation. Dr. Tabor's proof that such a material can be prepared has greatly increased the optimism of solar research people working in collector design. As this is the first successful attempt in this direction, it is almost inevitable that still better materials can be developed. A cheap coating with a broad differentiation between its absorption in the visible spectra and in the infrared will tremendously increase both the engineering efficiency and the economic feasibility of solar collector devices. Dr. Tabor's discovery has permitted the design of the first successful steam-producing flat-plate collector. Further advances with such coatings will permit operation of flat-plate collection at still higher temperatures with a resultant increase in the available temperature differential and a concomitant increase in the cycle efficiency of any device connected to the collector.

The solar engineer also has critical need of materials for special light transmission properties and stability. Obviously a material with differential transmissivity which would transmit the visible incoming light and be opaque to the re-radiated, would be as valuable as the Tabor type surfaces. To date, no such materials have been devised.

Even less demanding is the specification for a material which would be highly transparent to visible light, stable to photochemical degradation, lightweight, and easily fabricated. Every new transparent plastic has been eagerly examined by solar researchers to see if it might afford a substitute for glass in solar devices. So far none has met the test. Known transparent plastic materials yellow and brittle with prolonged exposure to sunlight. The hope for a plastic with satisfactory properties persists, since the ease of fabrication and the lessened structural demands resulting from its light weight promise a substantial reduction in the cost of solar devices.

A variation of the requirement is found among the builders of solar furnaces and high-temperature concentrating devices. The designer of a solar furnace is limited by the properties of existing materials to the use of back-silvered glass elements for his reflector. The weight of such elements dictates a massive supporting structure which increases costs. Polished

A CHEMIST LOOKS AT SOLAR ENERGY

aluminum or other metal elements have lesser weight and more complete reflectivity. However, there is no coating available which will protect these surfaces against corrosion and erosion without introducing great loss in reflectivity. A truly transparent, stable plastic coating, not now available, would answer this requirement.

A more exotic challenge to the chemist is afforded by the recently developed barrier layer cell for the conversion of radiant energy into electricity, known as the Bell solar battery. These cells are composed of highly purified monocrystalline silicon impregnated with controlled impurities. Pure silicon is expensive. Grown into large single crystals it is more so. When carefully sliced and treated to produce a solar cell, its cost approaches \$25. a square inch. The application of such converters, even if they approach the theoretical efficiency of 22%, will be extremely limited.

This suggests a technique for producing such semiconductor surfaces continuously, perhaps as a coating on a plastic or metallic sheet. Such a fabrication technique, perhaps based on an epitaxy phenomenon, might reduce present costs of such devices up to a thousand-fold, which would bring such solar energy converters into economic competition with many sources of electrical energy. Perhaps a chemist or chemical engineer can supply the key to such a technique.

What can the chemist do to counteract the inherent intermittency of solar energy? Throughout history, the problem of storing energy has largely frustrated the efforts of man, although it is the common skill of the lowliest form of protoplasm. Man's best achievement in this direction seems to be the galvanic storage battery, clumsy, inefficient, and expensive. If the storage battery had really been improved in a major way in the past fifty years, the electric generating capacity in this country might operate at something more than the 50% load factor at which it operates today. A highly efficient storage battery would solve the problem of solar energy storage. Pending the discovery of such a device, there are other techniques which warrant investigation.

The storage of solar heat as heat of fusion in molten salts has often been considered. Unfortunately, nature's characteristic perversity has been demonstrated once more in the fact that the obvious salts which melt in the proper temperature range resist nucleation in recurrent melting and solidifying cycles. Even more critical is the interconversion between various hydrates of the salts which often results in the formation of a solid precipitate and a saturated solution rather than the solid phase of the hydrate. It seems reasonable that more satisfactory salts must exist for this purpose, but they have not yet been discovered or produced.

A possibility for the storage of heat which has been less well explored is suggested by the heat of dissociation or heat of formation of various unstable chemical combinations. Theoretically it should be possible to store heat from the sun in such a system under proper conditions. But this possibility awaits the initiative of an enterprising chemist.

The most common mechanism for the storage of energy, used by plant and animal life, is the elevation of a chemical system to a higher energy level. Chemists employ this mechanism when they conduct any endothermic reactions, though they do not normally think of it as an energy storage operation, except perhaps when the end product is a special fuel or an explosive. Photochemistry is the name applied to that branch of science which deals with the direct conversion of radiant energy into chemical energy. Photochemistry has usually been limited to the processes characteristic of the plant cell, with an extension into the field of photographic chemicals. This limited perspective is not warranted if we would consider the exploitation of the sun's radiation. Other photochemical reactions which are known, at least empirically, warrant investigation as possible mechanisms for the conversion of solar radiation. There is every reason for optimism in expecting that such chemical conversion mechanisms might be as efficient, and probably less ex-

pensive, than the solid-state physics mechanisms exemplified by the silicon cell.

Reactions are known to exist by which water may be decomposed through exposure to sunlight with the consumption of no additional material. One of these systems, involving cerium salts, has been rather fully explored. Others appear feasible in theory. These reactions remain a blank in the records of chemistry simply because the non-biological chemist has largely passed over the field of photochemistry. The potential practical significance of these reactions is immeasurable. The production of hydrogen and oxygen in ideal proportions to provide a perfect fuel, while consuming nothing but water and sunlight, outdoes the prestidigitation of producing nylon stockings from coal, air, and water. Such conversion mechanisms inherently solve the storage problem since in a sense energy can then be stored in pressure bottles. Should electricity be the preferred form for the energy, an existing fuel cell (the Bacon cell) is already available to convert the chemical energy into electrical energy at efficiencies in excess of 80%. Thus a photolysis cell that would operate at 15% efficiency, combined with an 80% efficient fuel cell, would already equal the best efficiency, 12%, obtained in the solid-state solar battery.

Photogalvanic cells (light-motivated wet cells) to produce electricity

A CHEMIST LOOKS AT SOLAR ENERGY

have enjoyed less attention than photolysis reactions. There seem to be no theoretical reasons for discarding the possibility of photogalvanic cells. The non-development of these devices must be attributed solely to chemists' lack of interest. Still the photogalvanic cell offers the possibility of a device which would collect, convert, and store solar energy in one operation. Cells have been constructed with moderate storage capacity, though usually they are simple conversion devices. It would seem that photogalvanic mechanisms should be explored at least to the extent of defining their apparent limitations.

Other photochemical reactions are known or suspected which could be of considerable economic significance to industrial chemistry. In the air over Los Angeles on a smoggy day there are tons of ozone and other high oxidation potential compounds created by photochemical reactions under what, from the point of view of chemical processes, must be considered very adverse conditions. Reactants are in low concentration, often transitory, and under conditions of temperature, pressure, and contamination which would be the horror of a fastidious chemical engineer. And still a product is produced which in the channels of commerce would be worth thousands of dollars. Even more exotic is a recent discovery of the production of atomic gases in the upper atmos-

sphere formed presumably through the action of the sun.

Then there are such reactions as photopolymerization occurring in elastomers and certain plastics. Investigators have reported the production of polymeric materials having unusual physical and chemical properties, through the use of light polymerization. In some cases these polymerizations will occur not only under less rigorous conditions, but actually faster, through the action of sunlight, than they will by the normal thermal cure. These polymerizations may be related to the reactions which plague us in the deterioration of finishes and plastic materials in the sunlight. It also seems reasonable to speculate that the special products of photopolymerization are formed by a mechanism somehow related to that of high-energy radiation polymerization.

One of the earliest practical applications of solar energy will be in the high-temperature solar furnace. The U.S. Air Force recently announced plans to construct a research furnace in New Mexico. A few small furnaces are now operating in universities and industrial laboratories in the U.S. Several large furnaces have been in operation for some years abroad. Most of this work is aimed at the exploration of high-temperature alloys and ceramic materials. Solar furnaces are ideally suited for this, since they afford high temperatures under easily con-

trolled conditions. These same characteristics make solar furnaces seem useful for investigation of high-temperature reactions. The only major program involving a solar furnace in the field of high temperature chemical reactions is one in Algiers, where a pilot installation has been built for the oxidation of atmospheric nitrogen for the ultimate production of nitrate fertilizers. The Algerian installation has proven the feasibility of "freezing-in" the reaction product with high efficiency. But the pilot plant has been plagued with engineering difficulties, not unexpected since it is operating at unusually high temperatures and unfortunately the operating budget for the Algerian work has disappeared.

Little is known about chemical reactions at sustained temperatures in excess of 3000°C. Interesting speculations can be made about what might be expected. With the increasing availability of high-temperature solar furnace facilities, it behooves chemists and chemical engineers to give thought to what chemical reactions might be achieved under the conditions such installations afford.

It is pertinent to note that Lavoisier's epochal experiments were conducted on an early solar furnace. If oxygen could be discovered because of the unique facility afforded by a solar furnace in Lavoisier's day, it is not too visionary to anticipate further significant discoveries with the much im-

proved solar furnaces soon to be available in this country.

The exploration of the potentialities of solar energy has a long, not always honorable history, dating back to the days of Archimedes. In spite of this long history it has failed to enjoy a pronounced vogue during the era of modern applied research. Efforts toward the objective of utilizing the sun's energy have been sporadic and isolated. Chemists and chemical engineers have played a part in these investigations, but in general do not seem to have grappled directly with the characteristically chemical problems of the field, yet these chemical problems seem to be central to further major advances. Their importance has been too long discounted.

Solar energy can replace a major part of the energy supply of the world now provided by diminishing fossil fuel reserves. There are reasons to believe that solar energy will always be cheaper than nuclear energy for certain applications. It will be more easily accessible and require less complex apparatus. But before the economic reality can be achieved, the technological challenge must be met.

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Communications

Expand Activities Carefully

To the Secretary:

The editorial on page 473, Nov. CHEMIST, asks for comments on the proposed increase in dues. I believe dues should be increased as necessary to maintain the present operations of the INSTITUTE. However, I hope the Council will look carefully at our budget to see whether we are planning new services or operations or whether our present operations are expanding more rapidly than absolutely necessary. We should make the INSTITUTE's contributions to the profession as solid as possible, even leave some jobs until later, rather than spread it too thin. . . .

—Dr. J. A. Fuller, F.A.I.C.
Mill Valley, Calif.

A Good Idea

To the Editor:

. . . THE CHEMIST is an informative journal . . . If we agree that so many pages per volume is about what our treasury can stand, then why can we not change the format somewhat to give us more pages for news about our distinguished Associates, Members, and Fellows . . . My idea is: Condense the page that lists the editors, advisory board, etc. of THE CHEMIST, with the page that lists the Council, onto one page. This would give us eight more pages during the

year that could be used for news items. . . .

—Dr. Emmett B. Carmichael
Birmingham, Alabama

Editor's Note: This suggestion was put into effect, beginning with the December issue.

Income and Expense Statement Provided

To the Secretary:

You ask for comments on the "Double-Duty" Dollars piece in the November CHEMIST . . . If you can show me to my satisfaction where the money goes I would not object to higher dues. Charley Concannon used to keep me satisfied, but of course he is now dead. Why could we not have every year a condensed statement of income and outgo? . . .

—W. E. Bailey, F.A.I.C.
Washington, D. C.

Note: A complete statement of AIC income and expenses is presented at the AIC Annual Meetings. It is provided on request to those who are unable to attend.

Cheaper Dollars

To the Editor:

The several suggestions relative to "Our Double-Duty Dollars and the Future" are timely. More of cheaper dollars are needed to sustain the level of INSTITUTE activities. I will personally support, and feel certain that my fellow members will support, all measures needed to implement the objectives of the INSTITUTE. . . .

—Erwin C. Hoeman, F.A.I.C.
Yuma, Arizona

Finds Article Interesting

To the Editor:

The article, "Chemistry as a Profession" by R. B. Smith in THE CHEMIST, December, 1958, was very interesting.

It has been said, "out of the mouth of babes comes wisdom." The law defines an infant as one less than 21 years of age so that presumably student medalist Smith was an infant at the time he wrote this article.

The statement, "Industrial chemistry is seemingly on its way to becoming a highly educated form of skilled labor, if the social molding process is allowed to persist," is cause for reflection. This statement is followed by another of equal importance, "Only when they themselves have a sense of following their own curiosities, rather than carrying out the slave labor resulting from the ideas of another, will they deserve the title they seek." In short, the chemist deserves the title of professional only when he can work on his own and not be dominated by or subservient to a boss.

But how can such a desired result be obtained in a society where substantially all industrial chemists work in an industry composed of corporations? Necessarily chemists are dominated by bosses and told what to do even though the title of the boss is research director, senior chemist, or what-not.

In order for chemists to regain some prestige from their work, has not the time come for them to receive as com-

pensation a substantial portion of monies made on their inventions or utilized suggestions? Such a provision could be included in the contract of employment along with the provision that all inventions made in the field of endeavor of the corporation must be assigned to the corporation.

—Dr. Frank Makara, F.A.I.C.
New York, N. Y.

New Chapter Appreciated

To the Secretary:

I was especially pleased to learn that a new chapter was formed in the Mid-West with headquarters in an area where I will be located—Kansas City. On December 1, 1958, I will be joining the research organization of the Spencer Chemical Company as senior staff chemist in the Research Center at 9009 West 67th St., Merriam, Kansas. . . .

—Raymond S. Dalter, F.A.I.C.

Improving

To the Editor:

The CHEMIST gets better in every way.

—Dr. G. A. Abbott, F.A.I.C.
Grand Forks, N. D.

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Highlights of the October AIC Council Meeting

The 323rd meeting of the National AIC Council was held October 14, 1958, at 6:00 p.m., at The Chemists' Club, 52 E. 41st St., New York, N. Y., with President Emil Ott presiding.

The following officers, councilors, or alternates were present: Dr. L. T. Eby, Dr. M. H. Fleysher, Dr. Lloyd A. Hall, K. M. Herstein, Dr. F. A. Hessel, Dr. D. B. Keyes, Dr. W. E. Kuhn, Dr. J. H. Nair, Dr. E. Ott, Dr. L. H. Reyerson, M. Sittenfield, Dr. W. R. Sullivan, George H. Taft, Dr. L. Van Doren, M. B. Williams, Dr. C. J. Wessel, Dr. Max Bender, of the 1959 Annual Meeting Committee; Dr. S. D. Bruck, to petition for a Delaware Chapter; Dr. L. T. Eby, chairman of the Membership Committee; Dr. G. L. Royer, chairman of the Manpower Committee, and V. F. Kimball, were present.

President Ott reported that he had presented the Honor Scroll Award of the Chicago Chapter to Dr. Bernard S. Friedman, F.A.I.C., in Chicago, October 8. The next day, Dr. Ott spoke before a joint meeting of the New England Chapter and the Northeastern Section of the American Chemical Society, at Cambridge, Mass.

The Secretary announced that John H. Nair, former AIC president, would receive the Honorary

D.Sc. degree from Beloit College, October 18.

The Treasurer announced that the Board of Directors recommended a small increase in dues to meet the inflationary situation which will affect the budget for the 1959-60 fiscal year. The Council approved the following dues: Fellows, \$15.00; Members, \$10.00, and Associates, \$5.00, to take effect May 1, 1959. Since this requires an amendment to the By-laws, it was referred to the next meeting of the Council.

The Editor was instructed to have this proposed change in dues announced in *THE CHEMIST*, with financial facts presented for the consideration of the membership. (See November *CHEMIST*.)

The Treasurer stated that the Board of Directors recommended that dues refunds to Chapters also be increased, and this was referred to the December Council meeting.

Dr. Ott announced that an adjustment had been made in advertising rates for *THE CHEMIST* by the Board of Directors.

The Secretary announced with deep regret the deaths of the following members:

Judge John W. Crawford,
Emeritus, June 18, 1958.
Mark W. Eichelberger,
F.A.I.C., June 1958.
Dr. Paul M. Giesy,
F.A.I.C., August 25, 1958.

- Dr. Harry N. Holmes,**
Hon. AIC, July 1, 1958.
Dr. Lewis Hart Marks,
F.A.I.C., May, 1958.
Dr. Gustav T. Reich,
F.A.I.C., August 17, 1958.
Robert S. Sheie,
M.A.I.C., May, 1958.
Dr. Marvin O. Shrader,
F.A.I.C., September 12, 1958.
Dr. Ernest A. Vuilleumier,
F.A.I.C., October 7, 1958.

A moment of silence was observed by the Council in memory of these members.

The Secretary reported that the membership total is now 2821.

The following Fellows were granted Emeritus membership:

- Francis B. Foley**
Dr. Ernest Lee Jackson
Dr. Vlon N. Morris
Austin A. Scott
Dr. Karl T. Steik

A letter from Dr. Howard W. Post, concerning friendly international relations among chemists, was referred to Dr. Reyerson, together with suggestions made by the Councilors.

Dr. Bruck presented the petition of AIC members in the state of Delaware to form a Delaware Chapter of the AIC, and this petition was granted.

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The Secretary presented the petition of AIC members in Georgia, North Carolina, and South Carolina, to form a Piedmont Chapter, and this Chapter was approved.

The Secretary presented the petition of AIC members in the Midwest area to form a Midwest Chapter of the AIC, and this Chapter was also approved.

The Secretary presented proposed changes to the present employment contract for chemists and chemical engineers, recommended by a joint committee of the New York AIC Chapter and the New York ACS Section. These were referred to the Committee on Employer-Employee Relations.

Dr. Wessel stated that the Washington Chapter recommended that the Statler Hotel, Washington, D.C., be selected as headquarters for the 1961 Annual Meeting to be held in Washington, D.C., on May 11-12, 1961. This hotel and dates were approved.

Mr. Herstein, as chairman of the Committee on Education, reported progress.

Mr. Taft stated that there is interest in the New England Chapter in a course to be given at colleges to senior science students on professional attitudes, ethics, contracts, etc. The Committee on Education was asked to study this matter.

Mr. Herstein reported that the Professional Relations and Status

. . . COUNCIL MEETING

Committee of the American Chemical Society wished to establish official liaison with the AIC. (See editorial, December CHEMIST.)

Mr. Williams, chairman of the Committee on Chapter Activities, presented a map showing the boundaries of the Chapters. His Committee was requested to make recommendations concerning future Chapter areas. (See December CHEMIST, page 540.) The Committee proposes a goal of 25 Chapters and 5000 members as desirable for the greatest effectiveness.

Dr. Hall, chairman of the Committee to Implement AIC Objectives reported that comments on the Committee's report had been received from the Committee on Legislation, the Advisory Board of THE CHEMIST and the Committee on Manpower. He asked that THE CHEMIST be placed on the agenda for discussion at the next meeting.

Dr. Bender reported progress for the Program Committee of the 1959 Annual Meeting, to be held May 6-8, 1959, at the Traymore Hotel, Atlantic City, N. J. The theme is "The Chemist and Engineer in the Economy." Among the professional sessions will be one on "The Importance of Research to the Economy" and one on "Scientific Training in the Economy." Several outstanding speakers have already accepted.

Dr. Reyerson stated that the Twin City Chapter is starting preparations

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Mr. Sittenfield announced that Dr. Joseph W. E. Harrisson will receive the Honor Scroll of the Pennsylvania Chapter on January 6. Dr. Ott will present the Scroll.

Mr. Taft reported that the New England Chapter and the Northeastern Section of the American Chemical Society had held a joint meeting in October.

Dr. Wessel stated that the Committee on Legislation of the Washington Chapter was active concerning legislative matters affecting chemists and engineers.

Dr. Sullivan announced that the New Jersey Chapter has formed committees to study employer rating and salaries.

Dr. Fleysher said that the Niagara Chapter has planned several meetings and that it is working to build up its membership.

Mr. Williams announced that the Alabama Chapter has joined the Birmingham Engineers Council. One of the Chapter's members has been ap-

pointed chairman of a local scholarship committee.

The following new members were elected:

FELLOWS

Baker, Dr. Philip S.

Superintendent, Isotope Sales Dept., Oak Ridge National Laboratory, Oak Ridge, Tenn.

Bandel, Dr. David

Associate Technical Director, Tracerlab, Inc., Waltham, Mass.

Bittles, Dr. James Arthur, Jr.

Research Chemist, E. I. duPont de Nemours & Company, Wilmington, Del.

Buckwalter, Dr. Geoffrey R.

Frederick H. Levey Company, 222 44th Street, Brooklyn 32, N. Y.

Caldwell, Dr. Carlyle G.

Vice President, Research, National Starch Products Inc., 1700 West Front St., Plainfield, N. J.

Carter, Robert Allen

Dean and Head of Dept. of Natural Science, Alabama A. & M. College, Normal, Alabama.

Cashin, Dr. William M.

Manager, Chemical Laboratory, Knolls Atomic Power Lab., General Electric Company, P.O. Box 1072, Schenectady, N. Y.

Catron, Dr. Damon V.

Professor, Animal Nutrition, Iowa State College, Ames, Iowa.

Cavagnol, Dr. Jerry Charles

Laboratory Director of Analytical Chemical Lab., General Foods Corp., Research Center, Tarrytown, N. Y.

Cawley, John D.

Senior Research Chemist, Distillation Products Industries, Rochester, N. Y.

Clark, Dr. Arthur R.

President, Foxlyn Laboratories, Far Hills, N. J.

Clark, Dr. Walter E.

Senior Research Chemist, Oak Ridge National Laboratory, Oak Ridge, Tenn.

Connors, William M.

Biochemical Specialist & Analytical Supervisor, General Cigar Research Lab., 602 North Charlotte Street, Lancaster, Pa.

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Edelstein, Herbert

Chief Chemist, Director of Research, Bonat Inc., Lackawanna Avenue, West Paterson, N. J.

Gray, Dr. Frederick W.

Senior Research Chemist, Colgate-Palmolive Company, Jersey City, N. J.

Gropp, Dr. Armin H.

Professor of Chemistry, University of Florida, Gainesville, Florida.

Grove, Dr. E. L.

Associate Prof. of Chemistry, University of Alabama, University, Alabama.

Hart, Dr. Robert T.

Vice President, Gorham Laboratories, Inc. R.F.D. #2, Gorham, Maine.

Hay, John O.

Senior Research Chemist, Harshaw Chemical Company, 1945 East 97th St., Cleveland 6, Ohio.

. . . COUNCIL MEETING

Heininger, Dr. S. Allen

Project Specialist, Exploratory & Intermediates Section, Monsanto Chemical Co., Organic Division, Development Dept., St. Louis 24, Mo.

Herbolsheimer, Dr. Glenn

Senior Development Engineer, Phillips Petroleum Company, Bartlesville, Oklahoma.

Hill, Dr. Carl M.

Chairman & Prof. of Chemistry, School of Arts & Sciences, Tennessee Agricultural & Industrial State University, Nashville, Tenn.

Johnson, Earl D.

Senior Chemist, Phillips Petroleum Company, Kansas City, Kansas.

Jones, William C. Jr.

Senior Research Chemist, Humble Oil & Refining Company, Baytown, Texas.

Leake, Dr. Norman H.

Director of Research, S. E. Massengill Company, Bristol, Tenn.

Le Beau, Dr. D. S.

Director of Research, Midwest Rubber Reclaiming Company, P.O. Box 744, East St. Louis, Illinois.

Lee, Dr. Samuel H. Jr.

Associate Professor of Chemistry, Texas Technological College, Chemistry Dept., Lubbock, Texas.

Lehr, Dr. Hanns H.

Senior Research Chemist, Hoffmann-La Roche, Inc., Nutley 10, N. J.

Leonard, Dr. Frederick

Chief, Dept. of Organic Chemistry, Pharmaceutical Research Div., Geigy Chemical Corp., P.O. Box 430, Yonkers, N. Y.

Leonard, Dr. Reid H.

Consulting Biochemist, 2544 Escambia Avenue, Pensacola, Fla.

Lipsitz, Dr. Paul

Patent Chemist, E. I. duPont de Nemours & Co., Inc., P.O. Box 525, Wilmington 99, Del.

Lohmar, Dr. Rolland L.

Acting in charge of Forage Investigations, Northern Utilization Research & Development Division, U.S. Dept. of Agriculture, Peoria, Ill.

Lynch, Thomas J.

Patent Advisor, Legal Office, U.S. Army Ordnance Missile Command, Redstone Arsenal, Alabama.

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Vice President & Research Director, Research Div., The National Drug Company, Haines & McCallum Sts., Philadelphia 44, Pa.

Melver, James R.

Ketona Chemical Corporation, P.O. Box 6548, Tarrant, Birmingham, Alabama.

Melcher, Frank W.

Senior Staff Chemist, The Coca-Cola Company, Quality Control Div., P.O. Drawer 1734, Atlanta 1, Georgia.

Pearce, Dr. Eli M.

Research Chemist, E. I. duPont de Nemours & Co., Inc., Experimental Station, Carothers Research Laboratory, Wilmington, Del.

Pitzer, Dr. Kenneth S.

Dean, College of Chemistry, University of California, Berkeley, California.

Poisner, Ben

Owner & Manager, General Testing Laboratories, 1519 Walnut Street, Kansas City, Mo.

Ratcliff, Karl A.

Director, Pharmaceutical Div., Diamond Laboratories, Des Moines, Iowa.

Stevenson, Dr. Ernest F.

Research Chemist, Propellant Research Laboratory, U.S. Ordnance Division, Picatinny Arsenal, Dover, N. J.

Sullivan, Daniel J.

Production Manager, Vet Products Corporation, 1524 Holmes, Kansas City, Missouri.

Thompson, Davis H.

Superintendent, Coal Chemicals Dept., Fairfield Coke & Coal Chemical Works, T.C.C & I. Div. of U. S. Steel, Fairfield, Alabama.

Weiner, Bernard

*President, Vet Products Corporation,
1524 Holmes, Kansas City, Missouri.*

Wells, Bert H.

*Assistant to Vice President & Manager,
Bottlers' Production Control & Research
Dept., Quality Control Division,
The Coca-Cola Company,
P.O. Drawer 1734, Atlanta 1, Georgia.*

MEMBERS**Bier, Dr. Milan**

*Lecturer-Assistant Professor
of Chemistry, Fordham University,
New York 58, N. Y.*

Dilks, Kitty Fuller

*Technician, Roy F. Weston, Inc.,
45 St. Albans Avenue,
Newtown Square, Pa.*

Johnson, Walter H.

*Laboratory Assistant & Fellow,
Dept. of Chemistry, Alabama Medical
Center, 1919 7th Ave., South,
Birmingham, Alabama.*

Luts, Heino A.

*Own & Operate, USSR, Translation &
Information Center, ESTO Associates,
College Hill, Oxford, Miss.*

Matalon, Jack

*Organic Chemist, Herstein Laboratories,
Inc., 44 New St., New York 4, N. Y.*

Nocke, Henry H.

*Quality Assurance Coordinator,
Thiokol Chemical Corp.,
Redstone Division, Huntsville, Ala.*

Peck, Richard R.

*Research Chemist, Head, Viscose &
Nitrate Section, Southern Chemical
Cotton Company, Chattanooga, Tenn.*

Perry, Cortes L.

*Graduate Student, Chemistry Dept.,
University of North Dakota,
Grand Forks, North Dakota.*

Smith, John H.

*Analytical Chemist,
Los Angeles Testing Laboratory,
1300 S. Los Angeles St.,
Los Angeles 15, Calif.*

Smith, Myron M., Jr.

*Chemist, U.S. Geological Survey,
Old Post Office Bldg., Washington, D.C.*

Snyder, Henry A.

*President, Interstate Chemical
Company, 1228 West 12th Street,
Kansas City, Missouri.*

ASSOCIATES**Comer, Roger C.**

*Jr. Chemical Engineer,
Thiokol Chemical Corp.,
Redstone Division, Huntsville, Alabama.*

Mick, Curtis L.

1321 West First Street, San Pedro, Cal.

Roberts, Eugene C.

*"C" Chemist, Hayes Aircraft
Corporation, Birmingham, Alabama.*

**RAISED FROM MEMBER
TO FELLOW****Hanna, Delbert**

*Chemical Engineer,
Process Development Dept.,
Velsicol Chemical Corp.,
330 East Grand Ave., Chicago 11, Ill.*

Konigsbacher, Dr. Kurt S.

*Group Project Leader,
Evans Research & Development Corp.,
250 E. 43rd St., New York 17, N.Y.*

**RAISED FROM ASSOCIATE
TO FELLOW****Epstein, Dr. Martin E.**

*Senior Chemist, Pennsylvania Industrial
Chemical Corporation, Chester, Pa.*

**RAISED FROM ASSOCIATE
TO MEMBER****Derks, Dr. Miriam A.**

*Postdoctoral Fellow, Dept. of Medicine,
University of Kansas Medical Center,
Kansas City, Kansas.*

Richey, Dr. Willis D.

*Assistant Prof. of Chemistry,
Dept. of Chemistry, Bethany College,
Bethany, West Virginia.*

Webster, Dr. Owen W.

*Research Chemist,
E. I. duPont de Nemours & Company,
Experimental Station, Wilmington, Del.*

Zerlaut, Gene A.

*Research Chemist, U. S. Army Ballistic
Missile Agency, Bldg. 251, General
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Jack H. Dollinger, F.A.I.C., has been named president of Ferro Chemical Corp., Bedford, Ohio, a subsidiary of Ferro Corp. of Cleveland. In April, he was made vice president and appointed to the board of directors of Ferro Chemical.

John H. Nair, F.A.I.C., consultant, Summit, N. J., and former AIC president, received the honorary D.Sc., at a special convocation of Beloit College, Beloit, Wisconsin, on October 18th. He was one of three persons to be so honored. At the Alumni Institute of the College, Dr. Nair spoke on, "How adequate is the World's Food Supply."

H. Bennett, F.A.I.C., and **E. Rosendahl, F.A.I.C.**, formerly with Glyco Products Co., Inc., have opened the Cheminform Institute, at 10 Columbus Circle, New York 19, N. Y., to make available a file of trademarks in the chemical and allied fields, and to provide a chemical information service, international in scope. A leaflet is available on request.



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Dr. Eric J. Hewitt, F.A.I.C., vice president of Evans Research & Development Corp., New York 17, N. Y., announces that five additional staff members, including two chemists, have been employed.

Dr. John E. McKeen, Hon. AIC, president of Chas. Pfizer & Co., Inc., Brooklyn, N. Y. has been awarded the Golden Cross with laurel of the Greek Red Cross. It was presented, Oct. 14th, at a ceremony at the headquarters of the Greek Red Cross, in Athens, Greece.

Harry H. Dooley, M.A.I.C., has been named technical assistant to the vice president in charge of sales at United States Radium Corp., Morristown, N. J. He has been with the company since 1942.

Dr. John L. Parsons, F.A.I.C., vice president in charge of Pulp and Paper for Calkin & Bayley, Inc., industrial consultants, New York 17, N. Y., announces the acquisition of the services and personnel of H. Rimberg & Associates, finishing room consultants.

Ernest I. Welles, F.A.I.C., a member of the laboratory staff of Dexter Chemical Corp., New York 59, N. Y., since 1952, has been named chief chemist of Plant No. 1.

Oscar R. Sumner, M.A.I.C., is now technical assistant to the manager of pharmaceutical research and development of Chas. Pfizer & Co., Brooklyn, N. Y. He joined Pfizer in 1947.

John J. Levenson, Jr., F.A.I.C., and **Theodore S. Hodgins** have formed a new chemical manufacturing concern, the Century Chemical Corp., with offices at 60 East 42nd St., New York 17, N. Y. Mr. Hodgins is president; Mr. Levenson, executive vice president and treasurer. David T. McGovern is secretary.

ABOUT AIC MEMBERS

Dr. J. T. Thurston, F.A.I.C., technical director of the Agricultural Division of American Cyanamid Co., spoke at the Fifth Meeting of Poultry Pathologists, sponsored by the company at Bear Mountain Inn, Stony Point, N. Y., October 27-29th. He told the 110 scientists present that the great advances in the poultry industry could be attributed in large measure to their success in solving many poultry diseases.

L. Sonneborn Sons, Inc., New York, N. Y., announces the expansion of its Engineering Laboratory, at Nutley, N. J. **Leo Liberthson, F.A.I.C.**, technical director of the Engineering Laboratory, said the new facilities will enable Sonneborn to erect test structures under conditions that simulate normal building applications, for actual field tests.

Prof. Roger Adams, Hon. AIC, of the University of Illinois, has been awarded the Charles Lathrop Parsons Award of the American Chemical Society for outstanding public service. It was presented, December 6, in Washington, D. C.

The South Texas Section of the American Society for Quality Control is sponsoring a 3-day course by Dr. J. S. (Stu) Hunter of Princeton University on the Box Method experimentation, in Houston, Tex., Feb. 4-6, 1959. For information: C. T. Shewell, Research Center, Humble Oil & Refining Co., Baytown, Texas.

The Chemical Market Research Association will meet Feb. 18-19, 1959, at the Dinkler Plaza Hotel, Atlanta, Georgia. The subject will be chemicals for the textile industry. For information, V. R. Childress, meeting chairman, Tennessee Corp., 1330 West Peachtree, Atlanta 9, Ga.

The J. T. Baker Chemical Co. announces that, by agreement with Dow Chemical Co., all laboratory quantities of Dowex ion exchange resins will be sold by Baker through its laboratory supply houses.

Dr. John J. Keilen, Jr., has joined the Charleston Rubber Co., Charleston, S. C., as director of research and development.

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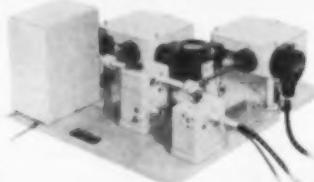


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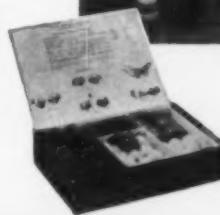
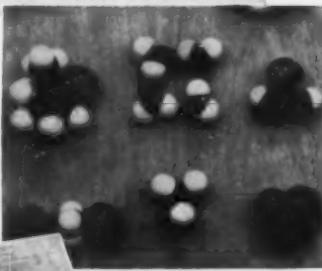
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